

Kaufman - Trading Systems & Methods - Chap19

Chap19

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19 Multiple Time Frames

Although the use of multiple time periods for analyzing markets has been popular for decades, few professionals have talked about it. It is only since better quote equipment has allowed this technique to be accessed by a wider audience that this approach has begun to appear in the public domain. The combination of multiple time periods allows the trader to time entries into the market using very shortterm data, such as 10minute bars, while watching the longerterm picture for the daily or weekly trend. Because it is agreed that most trends are best identified over a longer time period, while choosing the entry point requires a much faster response, the combination of two, or even three time intervals is very sensible. If the trend can be identified profitably, then the trader can filter or select shortterm trades that have a betterthanaverage chance of becoming winners.

For most traders, the use of any one time frame presents special problems. The very short term contains a high percentage of noise and obscures the market direction. The attempt to isolate patterns within charts of 5minute bars can divert Your efforts away from the big picture. Use of only weekly charts, although they clearly show the direction of prices, present higher risk and little opportunity for a good entry point. The obvious solution is to combine both charts into a program that uses each to its best advantage.

TUNING TWO TIME FRAMES TO WORK TOGETHER

Throughout most of this book, the individual systems and methods have been discussed for their own merits. An analyst would look for the specific RSI or stochastic that somehow generated the most profits by showing a trend change or an overbought, oversold condition. That is not the optimal use of an indicator when it is expected to tell you the best time to enter a trend. Instead, you will want the time period for the indicator to be much shorter than the time period used to calculate the trend. For example, if your trend system has a typical holding period of 1 month (about 23 business days), you may want your timing oscillator to have a good chance of giving you a better entry point within the first 5 days (20%) of that trade.

To get an indicator to reach overbought and oversold levels an average of every 5 days, you will need to use less than 5 days to calculate the indicator value. It doesn't matter if the indicator returns a loss when the results of all its buys and sells are totaled, because the profitable part of the program comes from the longerterm trend component. It is most likely that the oscillator will generate five overbought or oversold conditions during the typical holding period for the trend trade, but only one of them will be used the first one after the new entry signal. It is only important to see how the timing helps to improve overall profits and risk.

Figure 191 gives a TradeStation program that uses two time frames, a shorter one called ~1 a t a 1 and a longer one, i a t a h These could be daily and weekly, hourly and daily ' or an), combination of shorter

and longer time frames. The shorter one is used to calculate a fast stochastic (actually %Kslow and the longer interval applies to the weekly data. This use of multiple time frames is at the root of the techniques in this chapter.

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FIGURE 191 Program combining daily stochastic with weekly trend.

```
{Multiple time periods : Linear Regression S  
  
{period = length of exponential trend  
  data1 = shorter time period of stochastic  
  data2 = longer time period of linear regres  
  
    input:  fast(5), slow(50);  
    vars:   slope(0), overbot(80), oversold(80)  
  
{calculate stochastic over shorter data peri  
  stoch = @slowk(fast) of data1;  
  
{Linear regression slope}  
  slope = LinearRegSlope(close of data2  
  
    if slope > 0 then exitshort on close;  
    if slope < 0 then exitlong on close;  
  
{long signal : slope must be up and stochast  
  if slope > 0 and stoch < oversold then  
  
{short signal : slope must be down and stoch  
  if slope < 0 and stoch > overbot then
```

ELDER'S TRIPLESscreen TRADING SYSTEM'

The TripleScreen method combines three time frames to remove the disadvantages of each one. It combines indicators that are both trendfollowing with oscillators (normally associated with a countertrend direction). Dr. Elder has observed that each time frame relates to the next by a factor of 5. That is, if you are using daily data as the middle time period, then the shorter interval will be divided into five parts, and the longer period will be 5 days or 1 week.

To be practical, it is not necessary to divide a 6hour trading day into five intervals of 1 hour and 12 minutes. Rounding to 1 hour is close

enough. If, for example, you want to focus on trading a 10minute chart, then the middle interval is 10 minutes, the shortterm is 2 minutes, and the longterm is 1 hour (not 50 minutes).

In the following description, screen 1 holds the longest time frame while screen 3 shows the shortest one.

Screen 1: The Major Movement

The longterm view gives the market tide, a clear perspective of the major market trend, or sometimes lack of trend. Weekly data is used for this example, which is consistent with most experience that less frequent data (i.e., weekly or monthly) smooths the price movement by eliminating interim noise. Although there are many other choices for a longterm trend, the TripleScreen approach uses the slope of the weekly MACD, where the histogram that represents the MACD value is very smooth, equivalent to, for example, a 13week exponential smoothing. The trend is up when the MACD bar, or 13week exponential value is higher than that of the previous week; the trend is down when this week's value is lower.

'From Dr. Alexander Elder, Trading for a Living (John Wiley & Sons, 1993).

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Screen 2: The Intermediate Movement

Using an oscillator, the Screen 2 identifies the time period in which we would trade. Again, the specific oscillator is not as important as the time frame and the ability to identify market waves in the major movement of Screen 1. Two oscillators are suggested, the Force Index and Elderray, both described below. A stochastic can also be used.

1. Force Index

Force Index = volume(today) x [close(today) - close (yesterday)]

The Force Index is then smoothed using a 2day exponential smoothing, which has a smoothing constant of 333, and the resulting value is used to determine the overbought and oversold levels.

Entering a long position using the Force Index is not as clear as when using the Elderray; however, the following steps are necessary:

Step 1. The trend in Screen 1 is up.

Step 2. The 2day exponential of the Force Index falls below its centerline and does not fall below the multiweek low. When using a stochastic instead of the Force Index, buy when the stochastic falls below 30.

2. ElderRay

The Elderray is a technique for separating bullish and bearish movement.

Bull power high 13day exponential smoothing

Bear power low 13day exponential smoothing

To determine when to buy using the Elderray and Screen 1, the following two steps are necessary:

Step 1. The trend in Screen 1 is up.

Step 2. Bear power is negative but rising., bear power must not be positive.

Two additional steps may be used to filter trades and improve performance, but are not required:

Step 3. The last peak in bull power is higher than the previous peak (the most recent bull power should not be significantly lower than the

previous peak).

Step 4. Bear power is rising from a bullish divergence.

The opposite rules apply for sell signals.

Screen 3: Timing

The final screen is for fastest response, primarily for identifying intraday breakouts. To improve the point of entry, Screen 3 can be used to set long positions when the current price moves above the previous day's high. There is no calculation involved, simply a Buy Stop order using the shortest time period. For this example, where Screen 1 is weekly and Screen 2 is daily, Screen 3 would be hourly. Then to get a new buy signal, the hourly bar must move above the highest hourly bar of the previous day. StopLoss

Every system needs risk control, and that most often comes as a StopLoss order. The TripleScreen approach positions the stop as a threestep process. For a long position,

Step 1. First, place the stop below the low of the day of entry, or the previous day's low, whichever is lower.

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Step 2. Move the stop to the breakeven level as soon as possible. Naturally, there must be some room between the stoploss level and the current price; otherwise, the stop will always be hit.

Step 3. Move the stop to protect 50% of the highest profits. In addition, you may consider taking profits when the stochastic or Force index moves above the 70% level.

ROBERT KRAUSZ'S MULTIPLETIME FRAMES

Although multiple time frame techniques have become more visible, the most robust approach has been taken by Robert Krausz. To understand the importance of first arriving at a sound theory before implementing and testing a trading program, we need to briefly review the characteristics of performance that indicate a robust method.

When testing a trendfollowing system, we should expect that a trend of 100 days, compared with a trend of 50 days, will produce larger profits per trade, greater reliability, and proportionally fewer trades. As you increase the calculation period, this pattern continues; when you reduce the calculation period this pattern reverses. You are prevented from using very short calculation intervals because slippage and commissions become too large; the longest periods are undesirable because of large equity swings. There must be a clear, profitable pattern when plotting returns per trade versus the average holding period.

The sophistication in Krausz's work lies in his understanding of this pattern, and its incorporation into the structure of his program, *The Fibonacci Trader*.¹ Krausz works in three time frames rather than two. Each time frame has a logical purpose and is said to be modeled after Gann's concept that the markets are essentially geometric. The shortest time frame is the one in which you will trade; in addition, there are two longer time frames to put each one into proper perspective. The patterns common to time frames are easily compared with fractals; within each time frame is another time frame with very similar patterns, reacting in much the same

way. You cannot have an hourly chart without a 15minute chart, because the longer time period is composed of shorter periods; and, if the geometry holds, then characteristics that work in one time frame, such as support and resistance, should work in shorter and longer time frames. Within each time frame there are unique levels of support and resistance; when they converge, the chance of success is increased. In Krausz's work, the relationships between price levels and profit targets are woven with Fibonacci ratios and the principles of Gann.

One primary advantage of using multiple time frames is that you can see a pattern develop sooner. A trend that appears on a weekly chart could have been seen first on the daily chart. The same logic follows for other chart formations. Similarly, the application of patterns, such as support and resistance, is the same within each time frame. When a support line appears at about the same price level in hourly, daily, and weekly charts, it gains importance.

As a wellknown trader,³ Krausz brings more than just three time frames and some unique strategies to one display screen. He endows the program with six rules:

Laws of Multiple time Frames

1. Every time frame has its own structure.
2. The higher time frames overrule the lower time frames.
3. Prices in the lower time frame structure tend to respect the energy points of the higher time frame structure.

³Robert Krausz, W.D. Gann Treasure Discovered (Geometric Traders Institute, 757 SE 17th Street, Suite 272, Ft. Lauderdale, FL 33316). Also see references in the section "Fibonacci and Human Behavior," Chapter 14.

¹ See Jack Schwager, *The New Market Wizards* (John Wiley & Sons, New York, NY 1992).

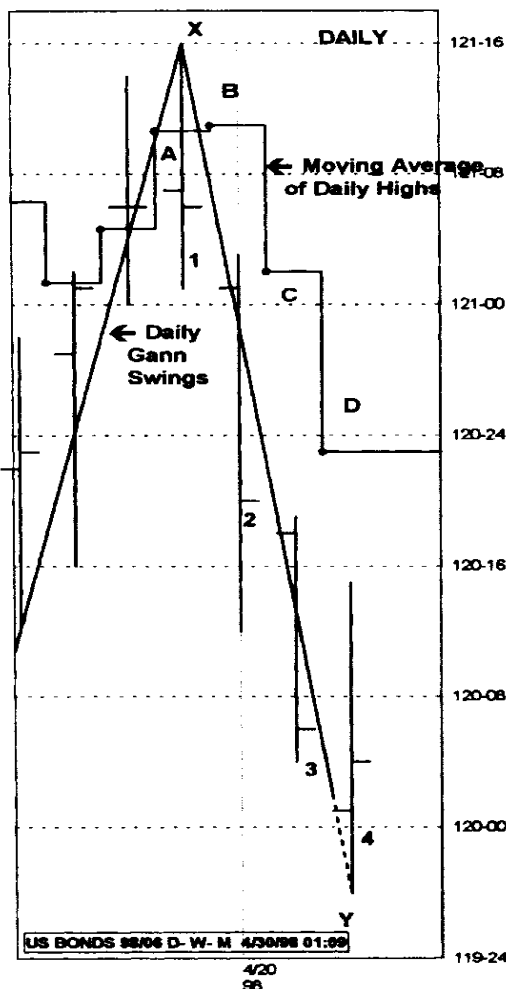
⁴ Copyright, Robert Krausz.

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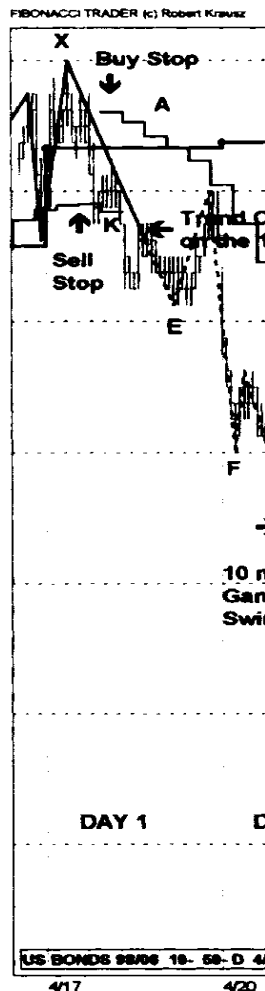
4. The energy points of support/resistance created by the higher time frame's vibration (prices) can be validated by the action of the lower time periods.
5. The trend created by the next time period enables us to define the tradable trend.
6. What appears to be chaos in one time period can be order in another time period.

Using three time frames of about the same ratio to one another (10minute, 50minute, and daily), with daily being the longest, Figure 192 shows the June 98 contract of U.S. bonds with a number of techniques applied over multiple time frames. Figure 192a uses only daily bars, while Figure 192b has 10minute bars, both charts drawn on the same price scale to facilitate comparison.

FIGURE 192 Krausz's multiple time frames, Jun 98 U.S. bonds. (a) Daily chart with Gann swings and a stepped moving average. (b) Multiple time frame structure for the corresponding 4 days.



(a)



Source: Chart created using *The Fibonacci Trader*. Used with permission. 757 SE 17th Street, Suite 272, Ft. Lauderdale, FL 33316. www.fibo

To understand the application of these techniques, it is necessary to identify the following features: 5

1. The Daily HiLo Activator (in this case, it is the moving average of the daily highs) is presented as a stepped line. The 4 days of interest are marked by the letters A, B, C, and D and appear on both (a) and (b) of Figure 192.
2. The 50minute HiLo Activator (seen in Figure 192b) is the moving

average of the 50minute highs, used as a Buy Stop, or the moving average of the 50minute lows, used as a Sell Stop.

3. The 10minute Gann swings, based on 10minute bars (in Figure 192b). The solid line shows when the Gann swing represents an upward trend, and the broken line when it shows a downtrend.

The interpretation of these techniques relies on the faster response provided by the 10minute bars, combined with the direction given by the longer time frames.

1. Based on the 10minute Gann swings, the trend turned from up to down at about 12 100, while the daily Gann swings place the trend change much later, near 12000.
2. The slope of the daily Gann swing, measured from point X to point Y on both charts, was down, defining the dominant trend. Short trades can be entered using the downtrend of the 10minute time frame. The process of coordinating the trend of the higher time period with that of the lower time period, and acting in only that direction, seems to be the most advantageous approach. The low of each 10minute swing, marked E, F, G, H, and I on the 10minute bar chart, provides opportunities to add to the original position.
3. At the top left of the 10minute chart, the 10minute close falls below the Sell Stop of the 50minute HiLo Activator at point K (about 12006). The Buy Stop then applies and follows declining prices for 3 days. These changes occur in the same area where the Gann swing indicates a trend change from up to down.
4. The 50minute moving average of the highs, shown in a step formation on the 10minute chart, tracks the highs of the market rallies on days 1, 3, and 4. The daily moving average of the highs (the Daily HiLo Activator) remained level on day 2 and turned down on day 3. The trend can only change to up when the Daily HiLo Activator turns up again.

A COMMENT ON MULTIPLE TIME FRAMES

in thinking out the use of multiple time frames it is necessary to understand that you cannot substitute a 10period moving average of 1hour bars with a 40period moving average of 15minute bars. Similarly, you cannot substitute a 10week average with a 50day average. It seems natural to think that any two trends covering the same time span will give the same result, but that is not the case. Although we can average many data points, we cannot get rid of all the noise; fewer data points over the same time span will always yield a smoother result. Therefore, the use of hourly, daily, and weekly time periods multiple time frames gives a much different picture of the market than simply using three different moving averages based on the same data. It is much easier to see the major trend using weekly data, find the shortterm direction based on daily data, and time your entry using hourly bars.

¹ This chart analysis was provided by Robert Krausz.